

## **Hydroids (Cnidaria: Hydrozoa: Hydroida) from Chindo Island, Korea**

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### **ABSTRACT**

The joint faunal survey of Chindo Island were made in commemoration of the 10th anniversary of the Korean Society of Systematic Zoology during July 22-26, 1994. The materials collected were identified to 31 species in eight families, of which eight species were previously known and the remainders were newly recorded from Chindo Island. *Halecium magellanicum* and *Obelia flexuosa* are new to the Korean fauna.

Adding three previously known species, which were not examined in this work, to the above results, the hydroids recorded from Chindo Island so far consist of 34 species in eight families.

Key words: Hydroids, Chindo Island, Korea

### **INTRODUCTION**

The joint faunal survey of Chindo Island were undertaken in commemoration of the 10th anniversary of the Korean Society of Systematic Zoology during July 22-26, 1994. By this survey the rich collections of hydroids were made by the author and others.

The Chindo Island is located in the southwestern tip of the Korean Peninsula, between the 125° 37' ~126°28' E and the 34°08' ~34°35' N, where is influenced by warm waters, driven from the Kuroshio. So that the hydroid fauna of Chindo Island consists mostly of tropical forms.

Up to date eleven species of hydroids were recorded from Chindo Island by Park and Rho (1986) and Rho and Park (1986). Twenty three species are newly recorded from Chindo Island. Of which *Halecium magellanicum* and *Obelia flexuosa* are new to the Korean fauna. The descriptions with figures for these two species are given and the previous known species examined/unexamined in this work are investigated for the hydroid fauna of Chindo Island.

## SYSTEMATICS

The asterisks (\*, \*\*, \*\*\*) indicate the species identified in this work. \* is the previous records; \*\* the new records in Chindo Island; \*\*\* the new records in Korean waters.

Order Hydroida 히드라충목

Suborder Arthecata 민갑히드라충아목

Family 1. Bougainvilliidae 보우겐빌히드라과

**\*\*1. *Bimeria vestita* Wright, 1859** 덮개히드라

**Previous records in Korea.** Rho and Park, 1983 (Chakyakto); Park, 1990 (Chakyakto).

**Material examined.** 126°16' -20' E, 34°21' -23' N, 23 July 1994.

Family 2. Eudendriidae 꽃히드라과

**\*\*2. *Eudendrium capillare* Alder, 1856** 털꽃히드라

**Previous records in Korea.** Rho and Park, 1983 (Chakyakto); Park, 1990 (Sögwip'o); Park, 1991 (Chakyakto); Park, 1993 (Supto).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994; Hoedong, 25 July 1994.

Family 3. Tubulariidae 관히드라과

**\*\*3. *Tubularia mesenbryanthemum* Allman, 1872** 관히드라

**Previous records in Korea.** Rho, 1969 (Taehŭksando); Park, 1990 (Söch'ön).

**Material examined.** Hoedong, 25 July 1994; Chöpto, 23 July 1994.

Suborder Thecata 킵히드라충아목

Family 4. Haleciidae 무늬히드라과

**\*\*4. *Halecium beanii* (Johnston, 1838)** 둥근무늬히드라

**Previous records in Korea.** Park, 1990 (Sögwip'o, Hoenggando, Mip'o); Park, 1991 (Sögwip'o).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994.

**\*\*5. *Halecium delicatulum* Coughtrey, 1876** 매혹무늬히드라

**Previous records in Korea.** Rho and Park, 1983 (Sögwip'o); Park, 1993 (Supto).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994.

**\*\*\*6. *Halecium magellanicum* (Hartlaub, 1905)** 마젤란무늬히드라(신칭) (Figs. 1A-D)

*Plumularia magellanicum* Hartlaub, 1905, p. 684, figs. N<sup>5</sup>, D<sup>5</sup>.

*Halecium magellanicum*: Linko, 1911, p. 15, fig. 2; Yamada, 1950, p. 6, pl. 1, figs. 3, 4; Yamada, 1959, p. 34.

**Material examined.** Chöpto, 23 July 1994.

**Description.** Colony small, below 10 mm in height, arising from rather thick stolon creeping on sea weed or *Mytilus* shells. Stem not fascicled, with one to three annulations in proximal, divided into

regular internodes, 0.09-0.10 mm in diameter, 0.31-0.40 mm in length on nodes, each of which bearing a short branches or hydrothecal pedicel. Branches from apophysis, alternate on stem, usually irregular segmented, giving to a hydrotheca in distal end, sometimes giving off secondary branches on distal end of hydrothecal pedicels. Hydrotheca cup shaped, 0.08-0.11 mm in height, 0.13-0.15 mm in margin, 0.07 mm in diameter of base, with long hydrothecal pedicel (0.09-0.11 mm). Gonangium from hydrorhiza and stems, 0.62-0.63 mm in length, 0.16-0.17 mm in margin, with corrugations on gonothecal wall, truncated distal end and with short smooth pedicel.

**Remarks.** Branches are variable in length and structure. Some ones consist of one short segment and the others several segments which are irregular in length with one another.

**Distribution.** North polar regions of the world and Japan (Akkeshi Bay).

**\*\*7. *Halecium tenellum* Hincks, 1861** 연한무늬히드라

**Previous records in Korea.** Rho and Chang, 1974 (Sŏgwip'o, Anmyŏndo); Park, 1993 (Mundo).

**Material examined.** 126°10' -21' E, 34°19' -23' N, 23 July 1994.

**\*\*8. *Hydrodendron gardineri* (Jarvis, 1922)** 가드너무늬히드라

**Previous records in Korea.** Park, 1991 (Sŏgwip'o).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994.

Family 5. Lafoeidae 바위불이히드라과

**\*\*9. *Filellum serratum* (Clarke, 1879)** 툼니실히드라

**Previous records in Korea.** Rho and Chang, 1974 (Yŏsu, Anmyŏndo, Chakyakto); Park, 1990 (Mip'o, Kyŏkp'o-ri); Park, 1991 (Sŏgwip'o, Sangch'ujado); Park, 1993 (Mundo).

**Material examined.** 126°16' E, 32°21' N, 23 July 1994.

**\*\*10. *Lafoëa fruticosa* (M. Sars, 1851)** 덩불바위불이히드라

**Previous records in Korea.** Rho and Chang, 1974 (Supto, Sŏgwip'o, Yŏsu, Wimi-ri); Park, 1990 (Mip'o, Nohwado, Sŏgwip'o, Ch'ŏnsando, Piyangdo, Kapádo); Park, 1991 (Sŏgwip'o, Cheju harbour, Ullŭngdo); Park, 1993 (Mundo).

**Material examined.** 126°10' -16' E, 34°19' -21' N, 23 July 1994.

Family 6. Campanulariidae 종히드라과

**\*\*11. *Eucopeella crenata* (Hartlaub, 1901)** 주걱히드라

**Previous records in Korea.** Rho and Park, 1980 (Sŏgwip'o, Kŏmundo, Sŏngsanp'o); Park, 1990 (Taekŭksando, Sŏgwip'o).

**Material examined.** Chŏpto, 23 July 1994.

**\*\*12. *Obelia bicuspidata* (Clarke, 1875)** 쌍뿔족혹히드라

**Previous records in Korea.** Rho and Park, 1980 (Chakyakto); Rho and Park, 1983 (Komso, Chakyakto, Taekŭksando); Park, 1990 (Ŏch'ŏngdo, Mip'o, Samch'ŏnp'o); Park, 1993 (Mundo).

**Material examined.** Chŏpto, 23 July 1994.

**\*\*\*13. *Obelia flexuosa* (Hincks, 1861) 굴곡흑히드라(신칭) (Figs. 1E-H)**

*Laomedea flexuosa* Hincks, 1861, p. 260.

*Campanularia flexuosa*: Hincks, 1868, p. 168; Nutting, 1915, p. 45, pl. 7, figs. 1-6.

*Obelia flexuosa*: Naumov, 1960, p. 266, fig. 154.

**Material examined.** Yongho-ri, 25 July 1994.

**Description.** Colony small, below 10 mm in height. Stem not fascicled, slightly flexuous, sometimes branched, divided into regular internodes. Each internode annulated on proximal ends, 5-8 annuli and with a distal apophysis alternately, which bears hydrotheca. Hydrotheca typical funnel-shaped and margin smooth, distinct intrathecal diaphragm, hydrothecal pedicel annulated throughout or usually middle part of pedicel smooth, 0.27-0.30 mm in total length, 0.19-0.26 mm in width of margin, 0.05-0.07 mm in width of base. Gonangium arising on hydrothecal pedicel or distal apophysis of stem, with annulated pedicel, cylinder-shaped, above truncated, 0.53-1.05 mm in length, 0.22-0.27 mm in maximum width. Gonotheal pedicel short, annulated throughout, 0.12-0.22 mm in length, 0.06-0.07 mm in width.

**Remarks.** The number of annulation on the base of each internode of stem, hydrothecal pedicel and gonotheal pedicel are variable.

**Distribution.** New England coast (America), British Islands, Norway, Iceland, Denmark, Helgoland, France, Mediterranean, Morocco, Baltic, Barents and White seas.

**\*\*14. *Obelia longissima* (Pallas, 1776) 긴흑히드라**

**Previous records in Korea.** Rho and Park, 1980 (Taehuksando, Yösu); Park, 1990 (Taejin, Chumunjin, Imwon).

**Material examined.** Kūmgaphaesuyokchang, 23 July 1994.

**\*\*15. *Rhizocaulus chinensis* Marktanner-Turneretscher, 1890 뿌리히드라**

**Previous records in Korea.** Rho and Park, 1980 (Ullūngdo, Mip'o, Chakyakto); Park, 1990 (Öch'öngdo, Mip'o, Changho, Samch'önp'o); Park, 1993 (Mundo).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994.

Family 7. Sertulariidae 테히드라과

**\*\*16. *Amphisbetia pacifica* Stechow, 1931 태평양테히드라**

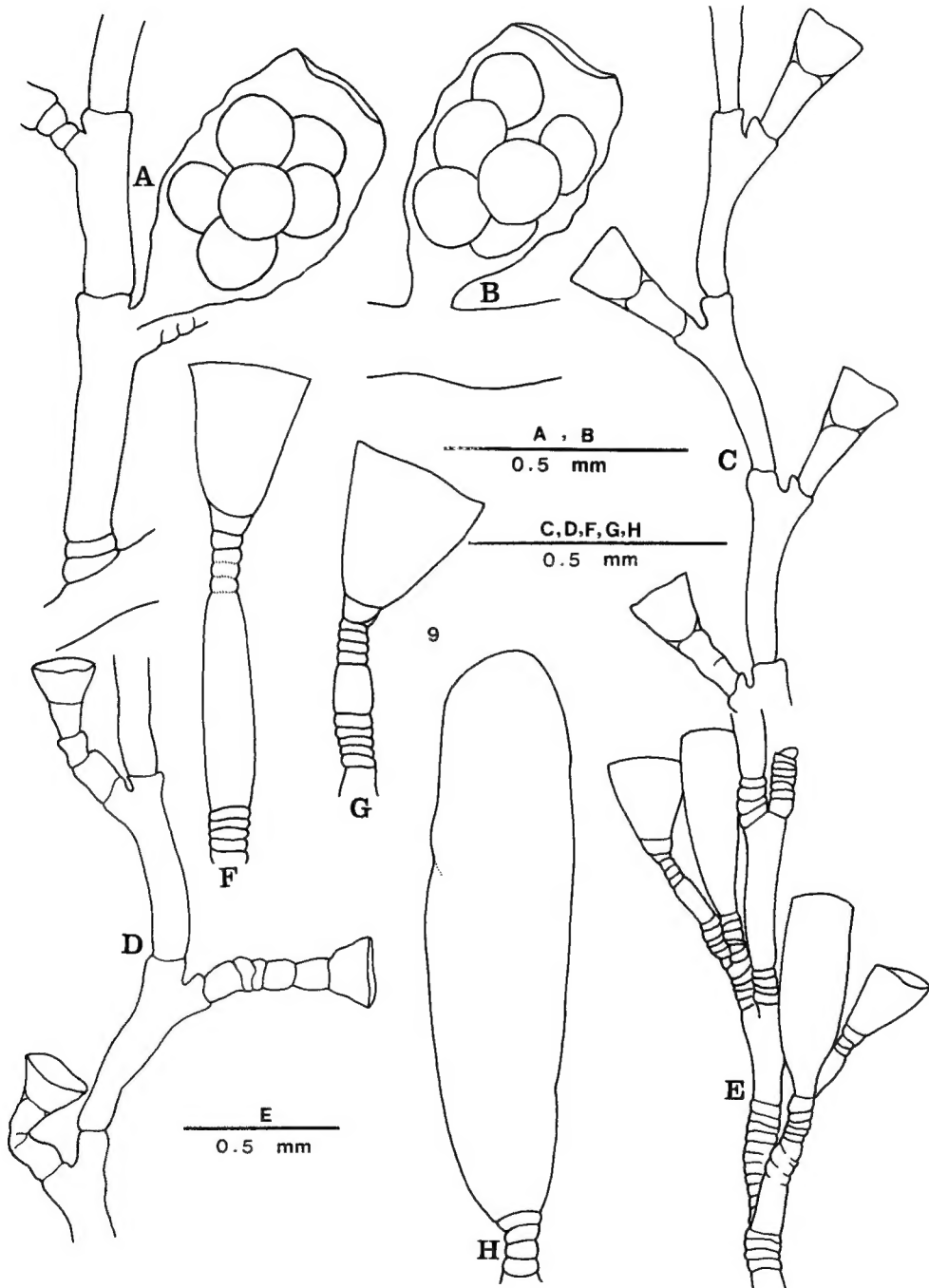
**Previous records in Korea.** Kamita and Sato, 1941 (Inch'ön harbour); Rho, 1967 (Sögwip'o, Wimi-ri, Yösu, Anmyöndo, Piin); Park and Rho, 1986 (Sögwip'o, Chindo <Hoedong, Chöpto>, Kyökp'o-ri, Mokto, Taech'ön, Yejakto); Park, 1990 (Chumunjin, Imwon); Park, 1993 (Supto).

**Material examined.** Hoedong, 25 July 1994.

**\*\*17. *Diphasia palmata* Nutting, 1905 넓은입히드라**

**Previous records in Korea.** Rho and Chang, 1972 (Sögwip'o); Rho and Chang, 1974 (Chodo, Supto, Sögwip'o, Anmyöndo); Rho and Park, 1986 (Sögwip'o, Pomong-ri, Mip'o); Park, 1990 (Mip'o, Sögwip'o); Park, 1993 (Mundo).

**Material examined.** 126°10' -16' E, 34°19' -21' N, 23 July 1994.



**Fig. 1.** A-D. *Halecium magellanicum*: A, gonangium from stem; B, gonangium from hydrorhiza; C, D, parts of colonies with hydrothecae. E-H. *Obelia flexuosa*: E, part of colony with hydrothecae and gonangia; F, G, enlarged hydrothecal pedicels with hydrothecae; H, enlarged gonangium.

**\*18. *Dynamena crisioides* Lamouroux, 1824** 민테히드라

**Previous records in Korea.** Rho, 1967 (Sögwip'o); Rho, 1969 (Haeundae, Mijo-ri, Kangnŭng); Rho and Chang, 1972 (Sasudo, Hoenggando); Rho and Chang, 1974 (Sögwip'o, Udo, Yundoldo, Köjedo, Sangju-ri); Park and Rho, 1986 (Mokto, Chindo <Hoedong, Chöpto>, Yönhwado, Udo, Wando, Shinhŭng-ri); Park, 1990 (Kŭm-odo).

**Material examined.** Kŭmgaphaesuyokchang, 23 July 1994.

**19. *Pasythea nodosa* Hargitt, 1908** 층쌍컵히드라

**Previous records in Korea.** Park and Rho, 1986 (Chindo <Hoedong>, Kuryongpó, Mundo, Sögwip'o).

**\*\*20. *Selaginopsis triserialis* Mereschowsky, 1878** 비단테히드라

**Previous records in Korea.** Park and Rho, 1986 (Kyöng-yölbijödo, Mip'o, Taech'ön).

**Material examined.** 126°10' E, 34°19' N, 23 July 1994.

**\*\*21. *Sertularella gayi* Lamouroux, 1827** 가이테히드라

**Previous records in Korea.** Park and Rho, 1986 (Chakyakto); Park, 1990 (Mip'o, Ch'öngsando).

**Material examined.** 126°10' -16' E, 34°10' -21' N, 23 July 1994.

**\*\*22. *Sertularella gotoi* Stechow, 1931** 고토테히드라

**Previous records in Korea.** Rho and Chang, 1974 (Yösu, Sögwip'o, Anmyöndo); Park and Rho, 1986 (Anmyöndo, Mip'o, Toch'öng-ri, Ullŭngdo); Park, 1990 (Mip'o, Ch'öngsando, Chumumjin).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994.

**23. *Sertularella levigata* Stechow, 1931** 민테히드라

**Previous records in Korea.** Park and Rho, 1986 (Mijodo, Mip'o, Chindo <Hoedong, Nokchin>, Sögwip'o, Öch'öngdo, Söngsanp'o, Yesong-ri, Sangju-ri, Póhang, Samch'önp'o).

**\*24. *Sertularella miurensis* Stechow, 1921** 가로테히드라

**Previous records in Korea.** Rho, 1967 (Sögwip'o, Tolsando, Taehŭksando); Rho, 1969 (Tolsando, Haeundae, Mijo-ri, Nodo, Kuryongp'o); Rho and Chang, 1974 (Sögwip'o, Piin, Öch'öngdo, Wimi-ri, Kamp'o, Odongdo, Yösu, Anmyöndo, Sokch'o); Park and Rho, 1986 (Sögwip'o, Köjedo, Anmyöndo, Haeundae, Mijodo, Sangju-ri, Mokto, Chindo <Hoedong, Chöpto>, Söngsanp'o, Kökpó-ri, Komso, Pömdo, Yösödo, Mip'o, Taech'ön, Pijindo, Kündök); Park, 1990 (Öch'öngdo, Ullŭngdo, Taejin, Chumunjin, Samch'ök, Imwon, Sokch'o).

**Material examined.** Chöpto, 23 July 1994; Haedong, 25 July 1994; Kulp'o, 25 July 1994.

**\*25. *Sertularella obtusa* Stechow, 1931** 무딘테히드라

**Previous records in Korea.** Park and Rho, 1986 (Anmyöndo, Chindo <Hoedong>, Taehŭksando, Sögwip'o); Park, 1990 (Naksan, Chukpyön); Park, 1993 (Mundo).

**Material examined.** Hoedong, 25 July 1994.

**\*\*26. *Sertularella sinensis* Jäderholm, 1896** 그물테히드라

**Previous records in Korea.** Rho and Chang, 1974 (Sögwip'o, Yösu); Park and Rho, 1986 (Cheju harbour, Mip'o, Sögwip'o, Supto, Pusan harbour, Toch'öng-ri, Pömdo); Park, 1990 (Mip'o, Chumunjin).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994; Kümghaphaesuyokchang, 23 July 1994.

**\*27. *Sertularia densa* Stechow, 1919** 뱀뱀화관히드라

**Previous records in Korea.** Rho and Park, 1983 (Odongdo); Park and Rho, 1986 (Hoenggando, Yösu, Piin, Chindo <Chöpto>); Park, 1993 (Mundo, Supto).

**Material examined.** Hoedong, 25 July 1994.

**28. *Symplectoscyphus hozawai* Stechow, 1931** 호자와테히드라

**Previous records in Korea.** Park and Rho, 1986 (Mip'o, Chindo <Hoedong, Chöpto>, Supto, Yönhwado, Yejakto, Taedundo).

## Family 8. Plumulariidae 깃히드라과

**\*\*29. *Aglaophenia suensonii* Jäderholm, 1896** 주발깃히드라

**Previous records in Korea.** Rho, 1967 (Sögwip'o); Rho, 1969 (Tolsan, Yokchido); Rho and Chang, 1972 (Sasudo, Sögwip'o, Pömdo, Chigwido); Rho and Chang, 1974 (Chodo, Supto, Sögwip'o, Wimi-ri); Rho and Park, 1986 (Kuryongp'o, Haeundae, Mip'o, Sögwip'o, Yokchido, Ch'ungmu, Haegūmgang, Samch'önp'o, Taep'o).

**Material examined.** 126°16' E, 34°21' N, 23 July 1994.

**\*30. *Aglaophenia whiteleggei* Bale, 1888** 흰깃히드라

**Previous records in Korea.** Kamita and Sato, 1941 (Inch'ön harbour); Rho, 1969 (Mijo-ri, Yokchido); Rho and Chang, 1972 (Hoenggando, Sögwip'o); Rho and Chang, 1974 (Piin, Yösu); Rho and Park, 1986 (Supto, Sögwip'o, Mip'o, Ch'öllip'o, Chindo <Chöpto>, Yöng-ilman, Hongdo <Yellow Sea>, Nohwado, Taedundo, Samch'önp'o, Póhang, Mosūlp'o, Tökchötkto); Park, 1990 (Mip'o); Park, 1993 (Mundo, Supto).

**Material examined.** Kümghaphaesuyokchang, 23 July 1994; Kūnp'o, 25 July 1994; 126°10' E, 34°19' N, 23 July 1994.

**\*31. *Antennella secundaria* (Gmelin, 1789)** 둘째깃히드라

**Previous records in Korea.** Rho, 1967 (Sögwip'o); Rho and Chang, 1972 (Sögwip'o, Chakyakto, Anmyöndo); Rho and Park, 1986 (Sögwip'o, Chindo <Hoedong, Chöpto>, Kuryongpó, Chakyakto, Yokchido, Hongdo <South Sea>, Yejakto); Park, 1990 (Ch'ölip'o, Sögwip'o); Park, 1993 (Mundo).

**Material examined.** 126°10' -16' E, 34°19' -21' N, 23 July 1994.

**\*\*32. *Plumularia pennycuikae* Millard et Bouillon, 1973** 페니깃히드라

**Previous records in Korea.** Rho and Park, 1980 (Chakyakto); Rho and Park, 1986 (Yöngjongdo, Sögwip'o, Chakyakto, Ullingdo, Taech'ön); Park, 1990 (Tökchötkto).

**Material examined.** Kŭmgaphaesuyokchang, 23 July 1994.

**\*\*\*33. *Plumularia setacea* (Linnaeus, 1758) 깃히드라**

**Previous records in Korea.** Rho, 1967 (Kŏmundo); Rho, 1969 (Tolsan, Haeundae); Rho and Chang, 1974 (Sŏgwip'o, Hallim, Wimi-ri); Rho and Park, 1986 (Wimi-ri, Anmyŏndo, Naksan, Kuryongp'o, Sŏgwip'o, Taehŭksando, Mip'o); Park, 1993 (Mundo).

**Material examined.** Chŏpto, 23 July 1994.

**\*34. *Pycnotheca mirabilis* (Allman, 1883) 질긴컵히드라**

**Previous records in Korea.** Rho, 1967 (Sŏgwip'o, Sŏnyudo); Rho and Chang, 1972 (Sŏgwip'o); Rho and Chang, 1974 (Sŏgwip'o, Supto, Wimi-ri); Rho and Park, 1986 (Wimi-ri, Mip'o, Chindo <Chŏpto>, Kuryongp'o, Sŏgwip'o, Samch'ŏnp'o); Park, 1990 (Kap'ado, Chumunjin); Park, 1993 (Mundo, Supto).

**Material examined:** 126°10' -16' E, 34°19' -21' N, 23 July 1994.

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## 진도産 히드라충류(자포동물문: 히드라충강)

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## 요 약

1994년 7월 22일부터 26일까지 한국동물분류학회 창립 10주년 기념 합동채집이 진도에서 실시되었다. 이 기간 중 채집된 히드라충류는 8과 31종으로 동정·분류되었는데, 이 중 8종은 진도기록종이고 나머지는 진도미기록종으로 판명되었다. 진도미기록종 중 *Halecium magellanicum*과 *Obelia flexuosa*는 한국미기록종으로 밝혀졌다. 본 연구에서 관찰되지 않은 3종의 진도기록종을 포함하여 현재까지 동정된 진도産 히드라충류는 8과 34종이 된다.